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NEWS 7 AUG 18 Simultaneous left and right truncation added to PASCAL  
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NEWS 9 AUG 18 Simultaneous left and right truncation added to ANABSTR  
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NEWS 14 OCT 21 BIOSIS file reloaded and enhanced  
NEWS 15 OCT 28 BIOSIS file segment of TOXCENTER reloaded and enhanced  
NEWS 16 NOV 24 MSDS-CCOHS file reloaded  
  
NEWS EXPRESS NOVEMBER 14 CURRENT WINDOWS VERSION IS V6.01c, CURRENT  
MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),  
AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003  
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FILE 'HOME' ENTERED AT 13:28:03 ON 25 NOV 2003

=> file medline, uspatful, dgene, embase, wpids, biosis, jicst, fsta  
COST IN U.S. DOLLARS SINCE FILE TOTAL  
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FILE 'MEDLINE' ENTERED AT 13:28:42 ON 25 NOV 2003

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=> s recrystallization inhibitio  
L1 0 RECRYSTALLIZATION INHIBITIO

=> s recrystallization inhibition  
L2 66 RECRYSTALLIZATION INHIBITION

=> s l2 and thermal hysteresis protein  
L3 6 L2 AND THERMAL HYSTERESIS PROTEIN

=> d l3 ti abs ibib tot

L3 ANSWER 1 OF 6 USPATFULL on STN  
TI Nucleic acid sequences encoding type III tenebrio antifreeze proteins  
and method for assaying activity  
AB Thermal hysteresis proteins and their nucleotide sequences derived from  
the Tenebrionoidea Superfamily which lower the freezing point of a  
solution without effecting the melting point. Related methods for  
preparing said proteins and for providing antifreeze or  
**recrystallization inhibition** properties to a subject  
formulation.

App

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:307900 USPATFULL  
TITLE: Nucleic acid sequences encoding type III tenebrio  
antifreeze proteins and method for assaying activity  
INVENTOR(S): Horwath, Kathleen L., Endwell, NY, UNITED STATES  
Easton, Christopher M., Ithaca, NY, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002173024	A1	20021121
APPLICATION INFO.:	US 2001-876796	A1	20010607 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-210446P	20000608 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	Mark Levy, SALZMAN & LEVY, Ste. 902, 19 Chenango St., Binghamton, NY, 13901	
NUMBER OF CLAIMS:	40	
EXEMPLARY CLAIM:	1	

NUMBER OF DRAWINGS: 131 Drawing Page(s)  
LINE COUNT: 10082  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 2 OF 6 USPATFULL on STN

TI Nucleic acid sequences encoding type III tenebrio antifreeze proteins and method for assaying activity

AB A **recrystallization inhibition** method for determining the presence, relative concentration, and/or activity of thermal hysteresis proteins comprising: providing a proteinaceous composition in a solvent to form a test solution; flash freezing said solution; raising the temperature of the frozen solution to an appropriate annealing temperature that allows for a partial melt, while limiting heterogeneity in ice grain sizes within said solution; maintaining said frozen solution at the annealing temperature for a length of time sufficient to allow for recrystallization; monitoring the ice crystal grain size changes over time; and determining the presence of functional thermal hysteresis proteins in said solution given the retention of significantly smaller ice crystal grain sizes relative to at least one control solution.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:307828 USPATFULL  
TITLE: Nucleic acid sequences encoding type III tenebrio antifreeze proteins and method for assaying activity  
INVENTOR(S): Horwath, Kathleen L., Endwell, NY, UNITED STATES  
Meyers, Kevin L., Trumansburg, NY, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002172951	A1	20021121
APPLICATION INFO.:	US 2001-876348	A1	20010607 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-210446P	20000608 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	Mark Levy, SALZMAN & LEVY, Ste. 902, 19 Chenango St., Binghamton, NY, 13901	
NUMBER OF CLAIMS:	34	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	131 Drawing Page(s)	
LINE COUNT:	10121	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 3 OF 6 USPATFULL on STN

TI Transgenic plants having a nucleic acid sequence encoding a dendroides antifreeze protein

AB The present invention is directed to transgenic plants having nucleic acid sequences encoding Dendroides canadensis thermal hysteresis proteins. The THPs of Dendroides have significantly greater thermal hysteresis activity than any other known anti-freeze protein. The thermal hysteresis activity of the purified THPs can be further enhanced by combining the THPs with various "activating" compounds.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 97:45207 USPATFULL  
TITLE: Transgenic plants having a nucleic acid sequence encoding a dendroides antifreeze protein  
INVENTOR(S): Duman, John G., South Bend, IN, United States  
PATENT ASSIGNEE(S): University of Notre Dame du Lac, Notre Dame, IN, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5633451		19970527
APPLICATION INFO.:	US 1995-569594		19951208 (8)
RELATED APPLN. INFO.:	Division of Ser. No. US 1995-485359, filed on 7 Jun 1995		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Fox, David T.		
ASSISTANT EXAMINER:	Haas, Thomas		
LEGAL REPRESENTATIVE:	Barnes & Thornburg		
NUMBER OF CLAIMS:	1		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	9 Drawing Figure(s); 5 Drawing Page(s)		
LINE COUNT:	966		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 4 OF 6 USPATFULL on STN

TI Nucleic acid sequences encoding dendroides antifreeze proteins

AB The present invention is directed to nucleic acid sequences encoding Dendroides canadensis thermal hysteresis proteins. The THPs of Dendroides have significantly greater thermal hysteresis activity than any other known anti-freeze protein. The thermal hysteresis activity of the purified THPs can be further enhanced by combining the THPs with various "activating" compounds.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 97:38394 USPATFULL

TITLE: Nucleic acid sequences encoding dendroides antifreeze proteins

INVENTOR(S): Duman, John G., South Bend, IN, United States

PATENT ASSIGNEE(S): University of Notre Dame du Lac, Notre Dame, IN, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5627051		19970506
APPLICATION INFO.:	US 1995-485359		19950607 (8)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Jacobson, Dian C.		
ASSISTANT EXAMINER:	Lau, Kawai		
LEGAL REPRESENTATIVE:	Barnes & Thornburg		
NUMBER OF CLAIMS:	4		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	9 Drawing Figure(s); 5 Drawing Page(s)		
LINE COUNT:	959		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 5 OF 6 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN

TI New cDNA polynucleotide encoding a **thermal hysteresis protein** which is a Type III anti-freeze protein derived from the Tenebrionoidea Superfamily, useful for providing antifreeze protection to improve the quality of food.

AN 2002-090137 [12] WPIDS

AB WO 200194378 A UPAB: 20020221

NOVELTY - A cDNA polynucleotide (I) comprising a nucleotide sequence for encoding a **thermal hysteresis protein** which is a Type III anti-freeze protein derived from the Tenebrionoidea Superfamily, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) a mRNA polynucleotide (II) comprising a nucleotide sequence for encoding thermal hysteresis proteins derived from the Tenebrionoidea

Superfamily transcribed from (I);

(2) a DNA or RNA probe having a sequence complementary or identical to a sequence of contiguous nucleotides for at least a portion of (I);

(3) a recombinant vector containing (I);

(4) a **thermal hysteresis protein**, preferably an endogenous Type III anti-freeze proteins, derived from the Tenebrionoidea Superfamily which lowers the freezing point of a solution without effecting the melting point of the solution;

(5) a consensus sequence with a nucleotide sequence selected from one of the four 481 nucleotide sequences (S1-S4) defined in the specification;

(6) a consensus sequence with an amino acid sequence selected from the 133 (S5), 134 (S6), another 134 (S7), another 134 (S8) amino acid sequence defined in the specification;

(7) a consensus sequence with the 133 amino acid sequence (S9) defined in the specification;

(8) a primer having a nucleotide sequence selected from P1-P3;

(9) a method (M1) for producing a polypeptide having antifreeze properties comprising forming a cloning vector with a Tm 12.86 family member gene encoding an antifreeze polypeptide, transferring genes of the cloning vector into DNA of host cell to create a transformed cell, expressing a mRNA sequence and a translated amino acid sequence from the recombinant expression vector, the sequence being isoforms of the Tm 12.86 T. molitor antifreeze polypeptide;

(10) a method (M2) for providing antifreeze or **recrystallization inhibition** properties to a subject formulation comprising incorporating at least 0.1 micrograms to 1 mg of an activated polypeptide into 1 ml of a subject formulation to obtain **recrystallization inhibition** or 1 mg to 25 mg of the activated polypeptide into 1 ml of a subject formulation to thermal hysteresis;

(11) a Tm 12.86 antibody/antiserum;

(12) a **recrystallization inhibition** method (M3)

for determining the presence, relative concentration, and/or activity of thermal hysteresis proteins comprising providing a proteinaceous composition in a solvent to form a test solution, flash freezing the solution, raising the temperature of the frozen solution to an appropriate annealing temperature that allows for a partial melt, while limiting heterogeneity in ice grain sizes within the solution, maintaining the frozen solution at the annealing temperature for a length of time sufficient to allow for recrystallization, monitoring the ice crystal grain size changes over time, and determining the presence of functional thermal hysteresis proteins in the solution given the retention of significantly smaller ice crystal grain sizes relative to at least one control solution;

(13) a method for quantitatively assessing the extent of recrystallization occurring in frozen foods, and the impact of solution additives to inhibit or limit recrystallization according to the process defined in M3; and

(14) a method for quantitatively assessing and comparing the effectiveness of cryoprotective solutions on the extent of recrystallization occurring in cryopreserved cells, tissues, solutions and the like, according to the process defined in M3.

CGCGGATCCCTCACCGACGAACAG (P1);

GAGAGGATAACTAATTGAGCTCGCC (P2); and

CGCGGATCCCTGACCGAGGCACAA (P3).

USE - The activated anti-freeze protein is incorporated into:

(a) plant, produce or fish in an amount sufficient to provide antifreeze protection;

(b) a region of a target tissue in an amount sufficient to provide antifreeze protein controlled limited tumor cell or target tissue cryoinjury during cryosurgery;

(c) hypothermic solutions or bathing media to reduce cold damage in order to provide cryogenic or hypothermic preservation of cells and tissues by incorporating the protein into the cells, tissue, or cell

membranes in a controlled amount sufficient to provide antifreeze protection;

(d) de-icing formulations or used on surfaces to reduce existing ice buildup or abate the formation of ice buildup on surfaces such as a road, aircraft, household products, cosmetic products, machinery and plant surfaces; or

(e) a food product in an amount sufficient to provide antifreeze protection to improve the quality of food by abating freezing of solutions, freezer burn, or degradation due to cold storage.

The polynucleotides for the activated protein are used to create transgenic or gene-modified plants, crops, fish, or animals having greater tolerance to cold climatization. The Tm 12.86 antibody/antiserum is used as a screening device to identify positive recombinant plaques containing cloned inserts capable in an expression vector system to produce recombinant products recognized by the antibody/antiserum. The Tm 12.86 antibody/antiserum which is also used as a screening device to screen cDNA libraries in an expression system, including cross-species cDNA libraries to identify homologous sequences in other species.

M3 is used for concurrent multiple sample testing of solutions which includes the 'sandwich' method; and application via a 96 well plate device (all claimed).

Dwg.0/8

ACCESSION NUMBER: 2002-090137 [12] WPIDS  
DOC. NO. CPI: C2002-027870  
TITLE: New cDNA polynucleotide encoding a **thermal hysteresis protein** which is a Type III anti-freeze protein derived from the Tenebrionoidea Superfamily, useful for providing antifreeze protection to improve the quality of food. *Appl.*  
DERWENT CLASS: C06 D16  
INVENTOR(S): HORWATH, K L; MEYERS, K L; EASTON, C M; MYERS, K L  
PATENT ASSIGNEE(S): (EAST-I) EASTON C M; (HORW-I) HORWATH K L; (MYER-I) MYERS K L; (UYNY) UNIV NEW YORK STATE RES FOUND; (MEYE-I) MEYERS K L  
COUNTRY COUNT: 91  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001094378	(A1)	20011213	(200212)*	EN	231
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ					
NL OA PT SD SE SL SZ TR TZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES					
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS					
LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL					
TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
AU 2001075389	A	20011217	(200225)		
US 2002172951	A1	20021121	(200279)		
US 2002173024	A1	20021121	(200279)		

#### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001094378	A1	WO 2001-US18532	20010607
AU 2001075389	A	AU 2001-75389	20010607
US 2002172951	A1 Provisional	US 2000-210446P	20000608
		US 2001-876348	20010607
US 2002173024	A1 Provisional	US 2000-210446P	20000608
		US 2001-876796	20010607

#### FILING DETAILS:

PATENT NO	KIND	PATENT NO
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AU 2001075389 A Based on WO 2001094378

X  
A

PRIORITY APPLN. INFO: US 2000-210446P 20000608; US 2001-876348  
20010607; US 2001-876796 20010607

L3 ANSWER 6 OF 6 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
TI Tracking the profile of a specific antifreeze protein and its contribution  
to the thermal hysteresis activity in cold hardy insects.  
AB This study summarizes some important new directions in research on  
antifreeze protein biosynthesis and regulation. It describes the recent  
development and availability of essential biochemical and cellular tools  
that make possible more direct cellular investigations, and an assessment  
of the relationship between **thermal hysteresis**  
**protein** (THP) levels and antifreeze activity (both thermal  
hysteresis and **recrystallization inhibition** (RI)).  
These tools include: 1) the isolation of a specific THP of high activity  
(designated Tm 12.86), and an additional endogenous activating factor of  
this antifreeze protein; 2) the ability to track the cellular and  
secretory patterns of Tm 12.86 immunologically; 3) the use of an in vitro  
fat body cell culture system for direct investigation of cellular events.  
and, 4) a means of quantifying RI behavior of purified Tm 12.86, and  
samples of unknown concentrations of THPs, to provide a more sensitive  
detection method for antifreeze activity at scaled down values associated  
with the in vitro system. In combination, these studies indicate that the  
adaptation mechanisms contributing to the overall antifreeze protein  
response in a cold hardy insect involves a complex interaction between  
antifreeze proteins and endogenous activators of these proteins. With the  
availability of these key tools, the details of a precise and seasonal  
regulation of these antifreeze protein/activator interactions, which  
ultimately generate an efficient cold hardy response, now have the  
potential to be worked out.

ACCESSION NUMBER: 1996:538806 BIOSIS  
DOCUMENT NUMBER: PREV199699261162  
TITLE: Tracking the profile of a specific antifreeze protein and  
its contribution to the thermal hysteresis activity in cold  
hardy insects.  
AUTHOR(S): Horwath, Kathleen L. [Reprint author]; Easton, Christopher  
M.; Poggioli, George J., Jr.; Myers, Kevin; Schnorr,  
Ingrid L.  
CORPORATE SOURCE: Dep. Biol. Sci., Binghamton Univ., Binghamton, NY  
13902-6000, USA  
SOURCE: European Journal of Entomology, (1996) Vol. 93, No. 3, pp.  
419-433.  
ISSN: 1210-5759.  
DOCUMENT TYPE: Article  
LANGUAGE: English  
ENTRY DATE: Entered STN: 10 Dec 1996  
Last Updated on STN: 10 Dec 1996

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FILE 'MEDLINE, USPATFULL, DGENE, EMBASE, WPIDS, BIOSIS, JICST-EPLUS,  
FSTA' ENTERED AT 13:28:42 ON 25 NOV 2003

L1 0 S RECRYSTALLIZATION INHIBITIO  
L2 6 S RECRYSTALLIZATION INHIBITION  
L3 6 S L2 AND THERMAL HYSTERESIS PROTEIN

=> s l2 and ice crystal grain size

L4 2 L2 AND ICE CRYSTAL GRAIN SIZE

=> d 14 ti abs ibib tot

L4 ANSWER 1 OF 2 USPATFULL on STN

TI Nucleic acid sequences encoding type III tenebrio antifreeze proteins and method for assaying activity

AB A **recrystallization inhibition** method for determining the presence, relative concentration, and/or activity of thermal hysteresis proteins comprising: providing a proteinaceous composition in a solvent to form a test solution; flash freezing said solution; raising the temperature of the frozen solution to an appropriate annealing temperature that allows for a partial melt, while limiting heterogeneity in ice grain sizes within said solution; maintaining said frozen solution at the annealing temperature for a length of time sufficient to allow for recrystallization; monitoring the **ice crystal grain size** changes over time; and determining the presence of functional thermal hysteresis proteins in said solution given the retention of significantly smaller ice crystal grain sizes relative to at least one control solution.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:307828 USPATFULL

TITLE: Nucleic acid sequences encoding type III tenebrio antifreeze proteins and method for assaying activity

INVENTOR(S): Horwath, Kathleen L., Endwell, NY, UNITED STATES  
Meyers, Kevin L., Trumansburg, NY, UNITED STATES

APPL

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002172951	A1	20021121
APPLICATION INFO.:	US 2001-876348	A1	20010607 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-210446P	20000608 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	Mark Levy, SALZMAN & LEVY, Ste. 902, 19 Chenango St., Binghamton, NY, 13901	
NUMBER OF CLAIMS:	34	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	131 Drawing Page(s)	
LINE COUNT:	10121	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

APPL

L4 ANSWER 2 OF 2 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN

TI New cDNA polynucleotide encoding a thermal hysteresis protein which is a Type III anti-freeze protein derived from the Tenebrionoidea Superfamily, useful for providing antifreeze protection to improve the quality of food.

AN 2002-090137 [12] WPIDS

AB WO 200194378 A UPAB: 20020221

NOVELTY - A cDNA polynucleotide (I) comprising a nucleotide sequence for encoding a thermal hysteresis protein which is a Type III anti-freeze protein derived from the Tenebrionoidea Superfamily, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) a mRNA polynucleotide (II) comprising a nucleotide sequence for encoding thermal hysteresis proteins derived from the Tenebrionoidea Superfamily transcribed from (I);

(2) a DNA or RNA probe having a sequence complementary or identical to a sequence of contiguous nucleotides for at least a portion of (I);

(3) a recombinant vector containing (I);

(4) a thermal hysteresis protein, preferably an endogenous Type III anti-freeze proteins, derived from the Tenebrionoidea Superfamily which lowers the freezing point of a solution without effecting the melting



point of the solution;

(5) a consensus sequence with a nucleotide sequence selected from one of the four 481 nucleotide sequences (S1-S4) defined in the specification;

(6) a consensus sequence with an amino acid sequence selected from the 133 (S5), 134 (S6), another 134 (S7), another 134 (S8) amino acid sequence defined in the specification;

(7) a consensus sequence with the 133 amino acid sequence (S9) defined in the specification;

(8) a primer having a nucleotide sequence selected from P1-P3;

(9) a method (M1) for producing a polypeptide having antifreeze properties comprising forming a cloning vector with a Tm 12.86 family member gene encoding an antifreeze polypeptide, transferring genes of the cloning vector into DNA of host cell to create a transformed cell, expressing a mRNA sequence and a translated amino acid sequence from the recombinant expression vector, the sequence being isoforms of the Tm 12.86 T. molitor antifreeze polypeptide;

(10) a method (M2) for providing antifreeze or **recrystallization inhibition** properties to a subject formulation comprising incorporating at least 0.1 micrograms to 1 mg of an activated polypeptide into 1 ml of a subject formulation to obtain **recrystallization inhibition** or 1 mg to 25 mg of the activated polypeptide into 1 ml of a subject formulation to thermal hysteresis;

(11) a Tm 12.86 antibody/antiserum;

(12) a **recrystallization inhibition** method (M3)

for determining the presence, relative concentration, and/or activity of thermal hysteresis proteins comprising providing a proteinaceous composition in a solvent to form a test solution, flash freezing the solution, raising the temperature of the frozen solution to an appropriate annealing temperature that allows for a partial melt, while limiting heterogeneity in ice grain sizes within the solution, maintaining the frozen solution at the annealing temperature for a length of time sufficient to allow for recrystallization, monitoring the **ice crystal grain size** changes over time, and determining the presence of functional thermal hysteresis proteins in the solution given the retention of significantly smaller ice crystal grain sizes relative to at least one control solution;

(13) a method for quantitatively assessing the extent of recrystallization occurring in frozen foods, and the impact of solution additives to inhibit or limit recrystallization according to the process defined in M3; and

(14) a method for quantitatively assessing and comparing the effectiveness of cryoprotective solutions on the extent of recrystallization occurring in cryopreserved cells, tissues, solutions and the like, according to the process defined in M3.

CGCGGATCCCTCACCGACGAACAG (P1);

GAGAGGATAACTAATTGAGCTCGCC (P2); and

CGCGGATCCCTGACCGAGGCACAA (P3).

USE - The activated anti-freeze protein is incorporated into:

(a) plant, produce or fish in an amount sufficient to provide antifreeze protection;

(b) a region of a target tissue in an amount sufficient to provide antifreeze protein controlled limited tumor cell or target tissue cryoinjury during cryosurgery;

(c) hypothermic solutions or bathing media to reduce cold damage in order to provide cryogenic or hypothermic preservation of cells and tissues by incorporating the protein into the cells, tissue, or cell membranes in a controlled amount sufficient to provide antifreeze protection;

(d) de-icing formulations or used on surfaces to reduce existing ice buildup or abate the formation of ice buildup on surfaces such as a road, aircraft, household products, cosmetic products, machinery and plant surfaces; or

(e) a food product in an amount sufficient to provide antifreeze

protection to improve the quality of food by abating freezing of solutions, freezer burn, or degradation due to cold storage.

The polynucleotides for the activated protein are used to create transgenic or gene-modified plants, crops, fish, or animals having greater tolerance to cold climatization. The Tm 12.86 antibody/antiserum is used as a screening device to identify positive recombinant plaques containing cloned inserts capable in an expression vector system to produce recombinant products recognized by the antibody/antiserum. The Tm 12.86 antibody/antiserum which is also used as a screening device to screen cDNA libraries in an expression system, including cross-species cDNA libraries to identify homologous sequences in other species.

M3 is used for concurrent multiple sample testing of solutions which includes the 'sandwich' method; and application via a 96 well plate device (all claimed).

Dwg.0/8

ACCESSION NUMBER: 2002-090137 [12] WPIDS  
DOC. NO. CPI: C2002-027870  
TITLE: New cDNA polynucleotide encoding a thermal hysteresis protein which is a Type III anti-freeze protein derived from the Tenebrionoidea Superfamily, useful for providing antifreeze protection to improve the quality of food.  
DERWENT CLASS: C06 D16  
INVENTOR(S): HORWATH, K L; MEYERS, K L; EASTON, C M; MYERS, K L  
PATENT ASSIGNEE(S): (EAST-I) EASTON C M; (HORW-I) HORWATH K L; (MYER-I) MYERS K L; (UYNY) UNIV NEW YORK STATE RES FOUND; (MEYE-I) MEYERS K L  
COUNTRY COUNT: 91  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
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WO 2001094378	A1	20011213	(200212)*	EN	231
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ					
NL OA PT SD SE SL SZ TR TZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES					
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS					
LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL					
TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
AU 2001075389	A	20011217	(200225)		
US 2002172951	A1	20021121	(200279)		
US 2002173024	A1	20021121	(200279)		

#### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
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WO 2001094378	A1	WO 2001-US18532	20010607
AU 2001075389	A	AU 2001-75389	20010607
US 2002172951	A1 Provisional	US 2000-210446P	20000608
		US 2001-876348	20010607
US 2002173024	A1 Provisional	US 2000-210446P	20000608
		US 2001-876796	20010607

#### FILING DETAILS:

PATENT NO	KIND	PATENT NO
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AU 2001075389	A Based on	WO 2001094378

PRIORITY APPLN. INFO: US 2000-210446P 20000608; US 2001-876348 20010607; US 2001-876796 20010607

=> d his

(FILE 'HOME' ENTERED AT 13:28:03 ON 25 NOV 2003)

FILE 'MEDLINE, USPATFULL, DGENE, EMBASE, WPIDS, BIOSIS, JICST-EPLUS, FSTA' ENTERED AT 13:28:42 ON 25 NOV 2003

L1 0 S RECRYSTALLIZATION INHIBITIO  
L2 66 S RECRYSTALLIZATION INHIBITION  
L3 6 S L2 AND THERMAL HYSTERESIS PROTEIN  
L4 2 S L2 AND ICE CRYSTAL GRAIN SIZE

=> s l2 and flash freezing

L5 2 L2 AND FLASH FREEZING

=> d l5 ti abs ibib tot

L5 ANSWER 1 OF 2 USPATFULL on STN

TI Nucleic acid sequences encoding type III tenebrio antifreeze proteins and method for assaying activity

AB A **recrystallization inhibition** method for determining the presence, relative concentration, and/or activity of thermal hysteresis proteins comprising: providing a proteinaceous composition in a solvent to form a test solution; **flash freezing** said solution; raising the temperature of the frozen solution to an appropriate annealing temperature that allows for a partial melt, while limiting heterogeneity in ice grain sizes within said solution; maintaining said frozen solution at the annealing temperature for a length of time sufficient to allow for recrystallization; monitoring the ice crystal grain size changes over time; and determining the presence of functional thermal hysteresis proteins in said solution given the retention of significantly smaller ice crystal grain sizes relative to at least one control solution.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:307828 USPATFULL

TITLE: Nucleic acid sequences encoding type III tenebrio antifreeze proteins and method for assaying activity

INVENTOR(S): Horwath, Kathleen L., Endwell, NY, UNITED STATES  
Meyers, Kevin L., Trumansburg, NY, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002172951	A1	20021121
APPLICATION INFO.:	US 2001-876348	A1	20010607 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-210446P	20000608 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	Mark Levy, SALZMAN & LEVY, Ste. 902, 19 Chenango St., Binghamton, NY, 13901	
NUMBER OF CLAIMS:	34	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	131 Drawing Page(s)	
LINE COUNT:	10121	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 2 OF 2 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN

TI New cDNA polynucleotide encoding a thermal hysteresis protein which is a Type III anti-freeze protein derived from the Tenebrionoidea Superfamily, useful for providing antifreeze protection to improve the quality of food.

AN 2002-090137 [12] WPIDS

AB WO 200194378 A UPAB: 20020221

NOVELTY - A cDNA polynucleotide (I) comprising a nucleotide sequence for

encoding a thermal hysteresis protein which is a Type III anti-freeze protein derived from the Tenebrionoidea Superfamily, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) a mRNA polynucleotide (II) comprising a nucleotide sequence for encoding thermal hysteresis proteins derived from the Tenebrionoidea Superfamily transcribed from (I);

(2) a DNA or RNA probe having a sequence complementary or identical to a sequence of contiguous nucleotides for at least a portion of (I);

(3) a recombinant vector containing (I);

(4) a thermal hysteresis protein, preferably an endogenous Type III anti-freeze proteins, derived from the Tenebrionoidea Superfamily which lowers the freezing point of a solution without effecting the melting point of the solution;

(5) a consensus sequence with a nucleotide sequence selected from one of the four 481 nucleotide sequences (S1-S4) defined in the specification;

(6) a consensus sequence with an amino acid sequence selected from the 133 (S5), 134 (S6), another 134 (S7), another 134 (S8) amino acid sequence defined in the specification;

(7) a consensus sequence with the 133 amino acid sequence (S9) defined in the specification;

(8) a primer having a nucleotide sequence selected from P1-P3;

(9) a method (M1) for producing a polypeptide having antifreeze properties comprising forming a cloning vector with a Tm 12.86 family member gene encoding an antifreeze polypeptide, transferring genes of the cloning vector into DNA of host cell to create a transformed cell, expressing a mRNA sequence and a translated amino acid sequence from the recombinant expression vector, the sequence being isoforms of the Tm 12.86 T. molitor antifreeze polypeptide;

(10) a method (M2) for providing antifreeze or **recrystallization inhibition** properties to a subject formulation comprising incorporating at least 0.1 micrograms to 1 mg of an activated polypeptide into 1 ml of a subject formulation to obtain **recrystallization inhibition** or 1 mg to 25 mg of the activated polypeptide into 1 ml of a subject formulation to thermal hysteresis;

(11) a Tm 12.86 antibody/antiserum;

(12) a **recrystallization inhibition** method (M3)

for determining the presence, relative concentration, and/or activity of thermal hysteresis proteins comprising providing a proteinaceous composition in a solvent to form a test solution, **flash freezing** the solution, raising the temperature of the frozen solution to an appropriate annealing temperature that allows for a partial melt, while limiting heterogeneity in ice grain sizes within the solution, maintaining the frozen solution at the annealing temperature for a length of time sufficient to allow for recrystallization, monitoring the ice crystal grain size changes over time, and determining the presence of functional thermal hysteresis proteins in the solution given the retention of significantly smaller ice crystal grain sizes relative to at least one control solution;

(13) a method for quantitatively assessing the extent of recrystallization occurring in frozen foods, and the impact of solution additives to inhibit or limit recrystallization according to the process defined in M3; and

(14) a method for quantitatively assessing and comparing the effectiveness of cryoprotective solutions on the extent of recrystallization occurring in cryopreserved cells, tissues, solutions and the like, according to the process defined in M3.

CGCGGATCCCTCACCGACGAACAG (P1);

GAGAGGATAACTAATTGAGCTCGCC (P2); and

CGCGGATCCCTGACCGAGGCACAA (P3).

USE - The activated anti-freeze protein is incorporated into:

(a) plant, produce or fish in an amount sufficient to provide antifreeze protection;

(b) a region of a target tissue in an amount sufficient to provide antifreeze protein controlled limited tumor cell or target tissue cryoinjury during cryosurgery;

(c) hypothermic solutions or bathing media to reduce cold damage in order to provide cryogenic or hypothermic preservation of cells and tissues by incorporating the protein into the cells, tissue, or cell membranes in a controlled amount sufficient to provide antifreeze protection;

(d) de-icing formulations or used on surfaces to reduce existing ice buildup or abate the formation of ice buildup on surfaces such as a road, aircraft, household products, cosmetic products, machinery and plant surfaces; or

(e) a food product in an amount sufficient to provide antifreeze protection to improve the quality of food by abating freezing of solutions, freezer burn, or degradation due to cold storage.

The polynucleotides for the activated protein are used to create transgenic or gene-modified plants, crops, fish, or animals having greater tolerance to cold climatization. The Tm 12.86 antibody/antiserum is used as a screening device to identify positive recombinant plaques containing cloned inserts capable in an expression vector system to produce recombinant products recognized by the antibody/antiserum. The Tm 12.86 antibody/antiserum which is also used as a screening device to screen cDNA libraries in an expression system, including cross-species cDNA libraries to identify homologous sequences in other species.

M3 is used for concurrent multiple sample testing of solutions which includes the 'sandwich' method; and application via a 96 well plate device (all claimed).

Dwg.0/8

ACCESSION NUMBER: 2002-090137 [12] WPIDS  
DOC. NO. CPI: C2002-027870  
TITLE: New cDNA polynucleotide encoding a thermal hysteresis protein which is a Type III anti-freeze protein derived from the Tenebrionoidea Superfamily, useful for providing antifreeze protection to improve the quality of food.  
DERWENT CLASS: C06 D16  
INVENTOR(S): HORWATH, K L; MEYERS, K L; EASTON, C M; MYERS, K L  
PATENT ASSIGNEE(S): (EAST-I) EASTON C M; (HORW-I) HORWATH K L; (MYER-I) MYERS K L; (UYNY) UNIV NEW YORK STATE RES FOUND; (MEYE-I) MEYERS K L  
COUNTRY COUNT: 91  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
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WO 2001094378	A1	20011213	(200212)*	EN	231
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ					
NL OA PT SD SE SL SZ TR TZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES					
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS					
LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL					
TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
AU 2001075389	A	20011217	(200225)		
US 2002172951	A1	20021121	(200279)		
US 2002173024	A1	20021121	(200279)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
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WO 2001094378	A1	WO 2001-US18532	20010607
AU 2001075389	A	AU 2001-75389	20010607
US 2002172951	A1 Provisional	US 2000-210446P	20000608
		US 2001-876348	20010607
US 2002173024	A1 Provisional	US 2000-210446P	20000608

US 2001-876796 20010607

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2001075389 A	Based on	WO 2001094378

PRIORITY APPLN. INFO: US 2000-210446P 20000608; US 2001-876348  
20010607; US 2001-876796 20010607

=> s l2 and annealing temperature  
L6 4 L2 AND ANNEALING TEMPERATURE

=> d l6 ti abs ibib tot

L6 ANSWER 1 OF 4 USPATFULL on STN  
TI Nucleic acid sequences encoding type III tenebrio antifreeze proteins  
and method for assaying activity  
AB Thermal hysteresis proteins and their nucleotide sequences derived from  
the Tenebrionoidea Superfamily which lower the freezing point of a  
solution without effecting the melting point. Related methods for  
preparing said proteins and for providing antifreeze or  
**recrystallization inhibition** properties to a subject  
formulation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:307900 USPATFULL  
TITLE: Nucleic acid sequences encoding type III tenebrio  
antifreeze proteins and method for assaying activity  
INVENTOR(S): Horwath, Kathleen L., Endwell, NY, UNITED STATES  
Easton, Christopher M., Ithaca, NY, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002173024	A1	20021121
APPLICATION INFO.:	US 2001-876796	A1	20010607 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-210446P	20000608 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	Mark Levy, SALZMAN & LEVY, Ste. 902, 19 Chenango St., Binghamton, NY, 13901	
NUMBER OF CLAIMS:	40	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	131 Drawing Page(s)	
LINE COUNT:	10082	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 2 OF 4 USPATFULL on STN  
TI Nucleic acid sequences encoding type III tenebrio antifreeze proteins  
and method for assaying activity  
AB A **recrystallization inhibition** method for  
determining the presence, relative concentration, and/or activity of  
thermal hysteresis proteins comprising: providing a proteinaceous  
composition in a solvent to form a test solution; flash freezing said  
solution; raising the temperature of the frozen solution to an  
appropriate **annealing temp rature** that allows for a  
partial melt, while limiting heterogeneity in ice grain sizes within  
said solution; maintaining said frozen solution at the **annealing**  
**temperature** for a length of time sufficient to allow for

recrystallization; monitoring the ice crystal grain size changes over time; and determining the presence of functional thermal hysteresis proteins in said solution given the retention of significantly smaller ice crystal grain sizes relative to at least one control solution.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:307828 USPATFULL  
TITLE: Nucleic acid sequences encoding type III tenebrio antifreeze proteins and method for assaying activity  
INVENTOR(S): Horwath, Kathleen L., Endwell, NY, UNITED STATES  
Meyers, Kevin L., Trumansburg, NY, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002172951	A1	20021121
APPLICATION INFO.:	US 2001-876348	A1	20010607 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-210446P	20000608 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	Mark Levy, SALZMAN & LEVY, Ste. 902, 19 Chenango St., Binghamton, NY, 13901	
NUMBER OF CLAIMS:	34	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	131 Drawing Page(s)	
LINE COUNT:	10121	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 3 OF 4 USPATFULL on STN

TI Hot rolled steel plate to be processed having hyper fine particles, method of manufacturing the same, and method of manufacturing cold rolled steel plate

AB A hot rolled steel sheet with improved formability and producing method therefor, which can be easily produced with general hot strip mills, having less anisotropy of mechanical properties and final ferrite grain diameter of less than 2 .mu.m that could not be achieved by the prior art. The hot rolled steel sheet comprises a ferrite phase as a primary phase, and has an average ferrite grain diameter of less than 2 .mu.m, with the ferrite grains having an aspect ratio of less than 1.5. The hot rolled steel sheet is obtained by carried out a reduction process under a dynamic recrystallization conditions through reduction passes of not less than 5 stands in the hot finish rolling.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2001:59205 USPATFULL  
TITLE: Hot rolled steel plate to be processed having hyper fine particles, method of manufacturing the same, and method of manufacturing cold rolled steel plate  
INVENTOR(S): Yasuhara, Eiko, Chiba, Japan  
Morita, Masahiko, Kurashiki, Japan  
Furukimi, Osamu, Chiba, Japan  
Okada, Susumu, Tokyo, Japan  
PATENT ASSIGNEE(S): Kawasaki Steel Corporation, Kobe, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6221179	B1	20010424
	WO 9913123		19990318
APPLICATION INFO.:	US 1999-297818		19990622 (9)
	WO 1998-JP4078		19980910
			19990622 PCT 371 date

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1997-1246779	19970911
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Yee, Deborah	
LEGAL REPRESENTATIVE:	Oliff & Berridge, PLC	
NUMBER OF CLAIMS:	30	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	5 Drawing Figure(s); 4 Drawing Page(s)	
LINE COUNT:	1139	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 4 OF 4 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN

TI New cDNA polynucleotide encoding a thermal hysteresis protein which is a Type III anti-freeze protein derived from the Tenebrionoidea Superfamily, useful for providing antifreeze protection to improve the quality of food.

AN 2002-090137 [12] WPIDS

AB WO 200194378 A UPAB: 20020221

NOVELTY - A cDNA polynucleotide (I) comprising a nucleotide sequence for encoding a thermal hysteresis protein which is a Type III anti-freeze protein derived from the Tenebrionoidea Superfamily, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) a mRNA polynucleotide (II) comprising a nucleotide sequence for encoding thermal hysteresis proteins derived from the Tenebrionoidea Superfamily transcribed from (I);

(2) a DNA or RNA probe having a sequence complementary or identical to a sequence of contiguous nucleotides for at least a portion of (I);

(3) a recombinant vector containing (I);

(4) a thermal hysteresis protein, preferably an endogenous Type III anti-freeze proteins, derived from the Tenebrionoidea Superfamily which lowers the freezing point of a solution without effecting the melting point of the solution;

(5) a consensus sequence with a nucleotide sequence selected from one of the four 481 nucleotide sequences (S1-S4) defined in the specification;

(6) a consensus sequence with an amino acid sequence selected from the 133 (S5), 134 (S6), another 134 (S7), another 134 (S8) amino acid sequence defined in the specification;

(7) a consensus sequence with the 133 amino acid sequence (S9) defined in the specification;

(8) a primer having a nucleotide sequence selected from P1-P3;

(9) a method (M1) for producing a polypeptide having antifreeze properties comprising forming a cloning vector with a Tm 12.86 family member gene encoding an antifreeze polypeptide, transferring genes of the cloning vector into DNA of host cell to create a transformed cell, expressing a mRNA sequence and a translated amino acid sequence from the recombinant expression vector, the sequence being isoforms of the Tm 12.86 T. molitor antifreeze polypeptide;

(10) a method (M2) for providing antifreeze or **recrystallization inhibition** properties to a subject formulation comprising incorporating at least 0.1 micrograms to 1 mg of an activated polypeptide into 1 ml of a subject formulation to obtain **recrystallization inhibition** or 1 mg to 25 mg of the activated polypeptide into 1 ml of a subject formulation to thermal hysteresis;

(11) a Tm 12.86 antibody/antiserum;

(12) a **recrystallization inhibition** method (M3) for determining the presence, relative concentration, and/or activity of thermal hysteresis proteins comprising providing a proteinaceous composition in a solvent to form a test solution, flash freezing the solution, raising the temperature of the frozen solution to an appropriate



**annealing temperatur** that allows for a partial melt, while limiting heterogeneity in ice grain sizes within the solution, maintaining the frozen solution at the **annealing temperature** for a length of time sufficient to allow for recrystallization, monitoring the ice crystal grain size changes over time, and determining the presence of functional thermal hysteresis proteins in the solution given the retention of significantly smaller ice crystal grain sizes relative to at least one control solution;

(13) a method for quantitatively assessing the extent of recrystallization occurring in frozen foods, and the impact of solution additives to inhibit or limit recrystallization according to the process defined in M3; and

(14) a method for quantitatively assessing and comparing the effectiveness of cryoprotective solutions on the extent of recrystallization occurring in cryopreserved cells, tissues, solutions and the like, according to the process defined in M3.

CGCGGATCCCTCACCGACGAACAG (P1);

GAGAGGATAACTAATTGAGCTCGCC (P2); and

CGCGGATCCCTGACCGAGGCACAA (P3).

USE - The activated anti-freeze protein is incorporated into:

(a) plant, produce or fish in an amount sufficient to provide antifreeze protection;

(b) a region of a target tissue in an amount sufficient to provide antifreeze protein controlled limited tumor cell or target tissue cryoinjury during cryosurgery;

(c) hypothermic solutions or bathing media to reduce cold damage in order to provide cryogenic or hypothermic preservation of cells and tissues by incorporating the protein into the cells, tissue, or cell membranes in a controlled amount sufficient to provide antifreeze protection;

(d) de-icing formulations or used on surfaces to reduce existing ice buildup or abate the formation of ice buildup on surfaces such as a road, aircraft, household products, cosmetic products, machinery and plant surfaces; or

(e) a food product in an amount sufficient to provide antifreeze protection to improve the quality of food by abating freezing of solutions, freezer burn, or degradation due to cold storage.

The polynucleotides for the activated protein are used to create transgenic or gene-modified plants, crops, fish, or animals having greater tolerance to cold climatization. The Tm 12.86 antibody/antiserum is used as a screening device to identify positive recombinant plaques containing cloned inserts capable in an expression vector system to produce recombinant products recognized by the antibody/antiserum. The Tm 12.86 antibody/antiserum which is also used as a screening device to screen cDNA libraries in an expression system, including cross-species cDNA libraries to identify homologous sequences in other species.

M3 is used for concurrent multiple sample testing of solutions which includes the 'sandwich' method; and application via a 96 well plate device (all claimed).

Dwg.0/8

ACCESSION NUMBER: 2002-090137 [12] WPIDS  
DOC. NO. CPI: C2002-027870  
TITLE: New cDNA polynucleotide encoding a thermal hysteresis protein which is a Type III anti-freeze protein derived from the Tenebrionoidea Superfamily, useful for providing antifreeze protection to improve the quality of food.  
DERWENT CLASS: C06 D16  
INVENTOR(S): HORWATH, K L; MEYERS, K L; EASTON, C M; MYERS, K L  
PATENT ASSIGNEE(S): (EAST-I) EASTON C M; (HORW-I) HORWATH K L; (MYER-I) MYERS K L; (UYNY) UNIV NEW YORK STATE RES FOUND; (MEYE-I) MEYERS K L  
COUNTRY COUNT: 91  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001094378	A1	20011213	(200212)*	EN	231
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ					
NL OA PT SD SE SL SZ TR TZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES					
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS					
LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL					
TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
AU 2001075389	A	20011217	(200225)		
US 2002172951	A1	20021121	(200279)		
US 2002173024	A1	20021121	(200279)		

# APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001094378	A1	WO 2001-US18532	20010607
AU 2001075389	A	AU 2001-75389	20010607
US 2002172951	A1 Provisional	US 2000-210446P	20000608
		US 2001-876348	20010607
US 2002173024	A1 Provisional	US 2000-210446P	20000608
		US 2001-876796	20010607

# FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2001075389	A Based on	WO 2001094378

PRIORITY APPLN. INFO: US 2000-210446P 20000608; US 2001-876348  
20010607; US 2001-876796 20010607